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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,317	09/30/2003	Jerald A. Cole	839-1498	2266
30024	7590	06/28/2004	EXAMINER	
NIXON & VANDERHYE P.C./G.E. 1100 N. GLEBE RD. SUITE 800 ARLINGTON, VA 22201			DOROSHENK, ALEXA A	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,317

Applicant(s)

COLE, JERALD A.

Examiner

Alexa A. Doroshenk

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/12/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

The status of the divisional application should be updated as it is now U.S.

Patent No. 6,667,022.

The title of the application should be changed that it is an apparatus and not a process.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-5 recited that they are dependent upon "claim 11". There is no claim 11 pending. The examiner believes this to be a typo and has treated the claims as if they depend upon claim 1 for examination purposes.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 1764

4. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Lyon (US 6,669,917 B2).

It is noted that these claims are apparatus claims and that a material or article worked upon does not limit an apparatus claim. MPEP 2115.

With respect to claim 1, Lyon discloses an apparatus comprising:

first (10) and second (12) fluidized bed reactors;

first and second solids transfer lines (col. 6, lines 31-35) between the first (10) and second (12) reactors;

a first inlet feed (16) to the first reactor (10);

a second inlet feed (18) to the second reactor (12);

means for removing (26) from the first reactor (10); and

means for removing from the second reactor (28).

With respect to claim 3, Lyon discloses wherein the first reactor (10) is a bubbling reactor (col. 6, lines 1-3).

With respect to claim 4, it can be seen in the figure that the second reactor (12) is a counterflow reactor by the positioning of the transfer lines between the first (10) and second (12) reactors to result in a downwardly flow of particles and the upwardly moving stream from the inlet (18).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1764

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon (US 6,669,917 B2) as applied to claim 1 above, and further in view of Lyon et al. ("Pollution Free Combustion of Coal and Other Fossil Fuels").

With respect to claim 2, Lyon teaches all of the limitations as discussed with respect to claim 1, above, as well as teaches that the reactions are to be "unmixed" to produce the desired product gases (col. 5, lines 30-39), but fails to disclose steam purge lines in communication with the solid transfer lines.

Lyon et al. also teaches a fluidized bed system with solid transfer lines between two fluidized bed reactors and illustrates wherein steam purge lines are provided to the transfer lines (see fig. 4). Lyon et al. teaches that steam is used as an isolation means to prevent crossover of gases between the reactor and the riser (p. 10, third paragraph). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply this teaching to the apparatus of Lyon in order to ensure the isolation of the produced gases in the individual reactors.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon (US 6,669,917 B2).

With respect to claim 5, Lyon teaches all of the limitations as discussed with respect to claim 1, above, as well as teaches that a cyclone or other cleanup system can be used to remove particles from a gas leaving the reactor (col. 5, lines 11-14). It would have been obvious to one of ordinary skill in the art at the time the invention was

Art Unit: 1764

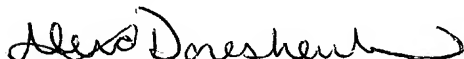
made to also apply this teaching to other gas outlets of the device, especially with regard to the hydrogen outlet (26) which can be sent to a fuel cell system (col. 6, lines 23-24) in order to ensure that there are no compounds in the stream that might poison the fuel cell.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexa Doroshenk
Patent Examiner
Art Unit 1764

June 23, 2004